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NEW NAMES IN *DERMATOPHYLLUM* (FABACEAE)

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ABSTRACT

Dermatophyllum is a newly established generic name for a group of taxa centering about *Sophora secundiflora*, a species largely confined to southern Texas and Mexico. The new combination **Dermatophyllum juanhintonianum** (B.L. Turner) B.L. Turner, comb. nov. is proposed, the name not otherwise accounted for, and one subspecific name, *Sophora. gypsophila* subsp. *guadalupensis* (B.L. Turner & A.M. Powell) Vincent, is elevated to specific status as **Dermatophyllum guadalupense** (B.L. Turner & A.M. Powell) B.L. Turner, comb. et stat. nov. Justification for the new nomenclature is provided, along with maps showing distributions.

KEY WORDS: Fabaceae, *Sophora, Dermatophyllum*

The publication by Gandhi, Vincent, and Reveal (2011), in which the generic name *Dermatophyllum* Scheele is provided for a group of taxa centering around *Sophora secundiflora* Ortega, has occasioned the present paper. The authors provided new generic combinations for all of the taxa except for *Sophora juanhintoniana* B.L. Turner, which was not accounted for in their treatment.

DERMATOPHYLLUM JUANHINTONIANUM (B.L. Turner) B.L. Turner, **comb. nov.** *Sophora juanhintoniana* B.L. Turner, Phytologia 76: 385. 1994.

Turner (1994), in the Latin diagnosis of the taxon, compared this gypseous species with the closely related calciphile (so far as known) *Sophora purpusii* Brandegee, the latter possessing smaller leaves and mostly white corollas with larger banners.

It should be noted that *Dermatophyllum juanhintonianum* occasionally occurs on gypsum soils with the more commonly encountered *D. secundiflorum*. At least one putative hybrid between these has been noted (*Hinton et al. 25155*, TEX), this collected with both parents on 9 November 1994, at 1650 m near Aramberi, Nuevo León, and noted by the collectors to be a hybrid. In my opinion, it is likely to be an F1 hybrid, with only a single such plant found at that locality.

DERMATOPHYLLUM GUADALUPENSE (B.L. Turner & A.M. Powell) B.L. Turner, **stat. nov.** *Sophora gypsophila* Turner & Powell var. *guadalupensis* B.L. Turner & A.M. Powell, Phytologia 22: 421. 1972. *Dermatophyllum gypsophilum* (B.L. Turner & A.M. Powell) Vincent subsp. *guadalupense* (B.L. Turner & A.M. Powell) Vincent, Phytoneuron 2011-57: 2. 2011.

Turner and Powell (1972) first called attention to this taxon, noting its similarity to the simultaneously described *Sophora gypsophila* Turner & Powell, a taxon occurring on gypseous soils in the state of Chihuahua, Mexico, a locality ca 300 km south of the Texas sites. The two varieties differed by numerous characters, including edaphic parameters, the Texas populations occurring in calcareous soils, the Mexican populations in gypsum soils, this all documented by the excellent study

of Northington (1976). Almost certainly, if Turner and Powell had information presented in the latter study, the two taxa would have been treated as distinct species instead of varieties. At least there is no morphological evidence suggesting that the two taxa intergrade, the populations concerned being isolated and occurring in different soil types, without intervening populations.

Northington, Morey, and Van Devender (1977), based upon rat-midden cave materials (dated at ca 16,000 BP) from southern Presidio County, concluded that the species of *Dermatophyllum* in the southwestern USA and northern Mexico are a monophyletic assemblage that possibly differentiated during the Pliocene. Evidence for such speciation events was largely based upon leaflet structure and shape, this depicted in their paper. To me, the latter data are not convincing, largely because the hypothetical "fossil" leaves of *Dermatophyllum* (as pictured) seem too small and isometric to serve as a prototype taxon for the taxa concerned. A presumed ancestor would likely have had much larger, less evenly shaped leaflets. Regardless, such phyletic speculation is based upon relatively little data. It seems more likely to me that the widespread *D. secundiflorum,* with much larger leaflets, gave rise to the rather isolated, smaller populations, which opted for special substrates many eons ago, persisting today as localized edaphic endemics.

The following simplified key provides for the identification of the several taxa discussed here. Their distributions are shown in Figures 1 and 2.

1. Larger leaflets mostly 3–6(–7) cm long; pods woody, cylindric and torose
..... **Dermatophyllum secundiflorum**
1. Larger leaflets mostly 0.5–3.0 cm long; pods not woody, flattened.

2. Larger leaflets mostly 1.0–2.5 cm long; USA, Sonora ..... **Dermatophyllum arizonicum**
2. Larger leaflets mostly 0.5–1.0 cm long; Mexico but not in Sonora.

3. Larger leaves mostly 6–12 cm long; petioles 8–12 mm long; Chihuahua
..... **Dermatophyllum gypsophilum**
3. Larger leaves mostly 3–6 cm long; petioles 4–8 mm long; Coahuila, Zacatecas.

4. Leaves 3–4 cm long; corollas essentially white, banner ca. 20 mm long
..... **Dermatophyllum purpusii**
4. Leaves 4–6 cm long; corollas lavender, banner ca. 14 mm long
..... **Dermatophyllum juanhintonianum**

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LITERATURE CITED

Gandhi, K.N., M.A. Vincent, and J.L. Reveal. 2011. *Dermatophyllum*, the correct name for *Calia* (Fabaceae). Phytoneuron 2011-57: 1–4.

Northington, D.K. 1976. Evidence bearing on the origin of infraspecific disjunction in *Sophora gypsophila*. Plant Syst. Evol. 125: 233–244.

Northington, D.K., E.D. Morey, and T.R. Van Devender. 1977. Phyletic interpretations from fossil (ca. 16,000 BP) remains of *Sophora* in the southwestern United States. Southwestern Naturalist 22: 495–504.

Turner, B.L. 1994. A new gypsophilic species of *Sophora* (Fabaceae) from Nuevo León, Mexico. Phytologia 76: 385–388.

Turner, B.L. and A.M. Powell. 1972. A new gypsophilic *Sophora* (Leguminosae) from northcentral Mexico and adjacent Texas. Phytologia 22: 419–422.

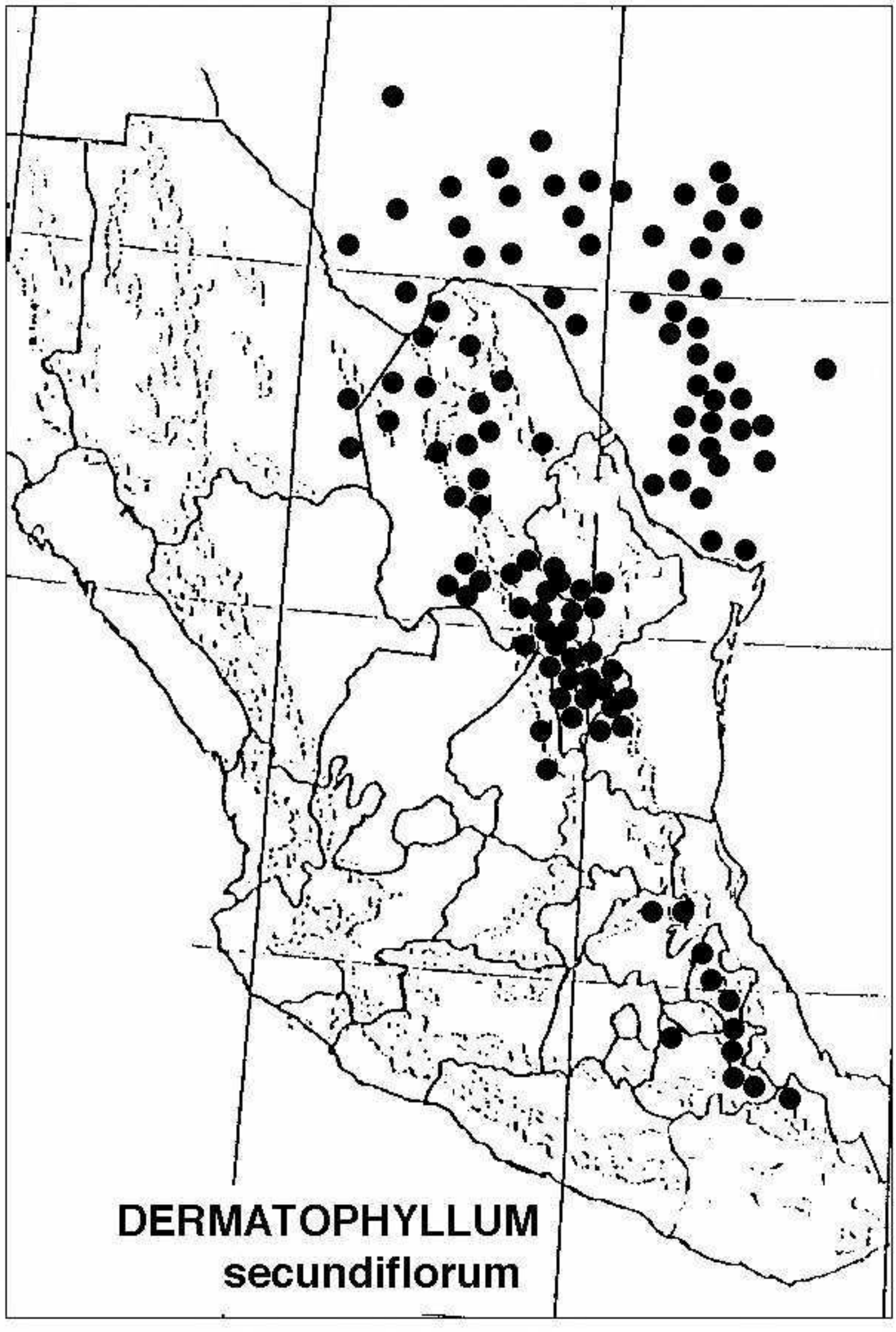

Figure 1. Distribution of *Dermatophyllum secundiflorum*.

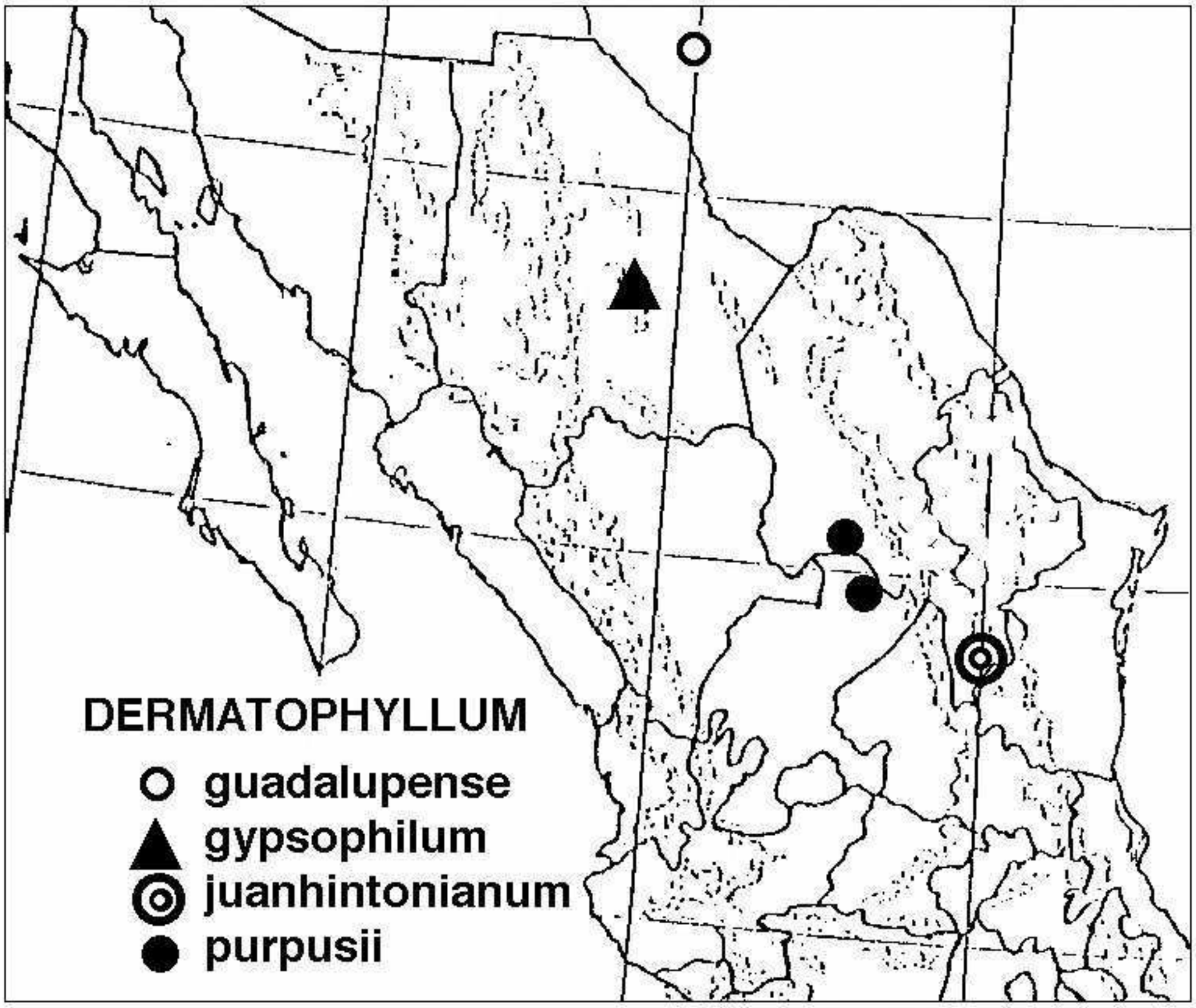

Figure 2. Distribution of the *Dermatophyllum gypsophilum* complex.